BY ORDER OF THE COMMANDER
482D FIGHTER WING

482D FIGHTER WING INSTRUCTION
21-105

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Maintenance

COMPOSITE TOOL KIT (CTK) AND EQUIPMENT MANAGEMENT PROGRAM

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This 482d Fighter Wing Instruction (482 FWI) incorporates procedures from Air Force Instruction (AFI) 21-101, Air Force Reserve Command Supplement 1 (AFRC Sup1), *Aircraft and Equipment Maintenance Management.* It assigns responsibilities, directs action and prescribes procedures to control tools, equipment, and electronic devices from all wing agencies dispatching to aircraft parking/runway/taxi areas and aircraft maintenance areas within the 482d Fighter Wing (482 FW) and its subordinate functions. It establishes responsibilities, standardized procedures and locations for the 482d Maintenance Group (482 MXG). Commanders and supervisors are responsible for ensuring personnel comply with the provisions of this instruction. It applies to all personnel assigned to the 482 FW. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using Air Force Form 847 (AF Form 847), *Recommendation for Change of Publication;* route AF Form 847 from the field through the appropriate functional's chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records* and disposed of in accordance with the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at **https://www.my.af.mil/gcss-af61a/afrims/afrims/rims.cfm.**

SUMMARY OF CHANGES

This interim change revises FWI 21-105 by adding additional CTK security requirements and prescribing wing agency tool and equipment control.

1. Composite Tool Kit (CTK) Security, Control, and Accountability.

1.1. Security:

1.1.1. Dispatched CTK's are inventoried and locked when left unattended. Tools shall be placed back in the appropriate inlays when unattended or when the job is complete.

1.1.1.1. Small items, equipment items and non-combustible Petroleum, Oil, Lubricants (POL) that present a Foreign Object (FO) hazard and can fit inside the CTK shall be stored in the CTK when left unattended.

1.1.1.2. Large items such as the fuel wrap around hose, tire jack cart or large tools that do not fit inside the CTK shall be placed neatly next to or on top of the CTK. Items that are capable of being locked shall be locked.

1.1.1.3. Large oversize equipment and combustible POL can also be stored on a roll around carts. However, the cart must be secured to an aircraft grounding point with a lanyard and lock when left unattended on the flight line unless the cart has brakes.

1.1.1.4. In all cases, the above equipment shall be turned in no later than the end of the shift.

1.1.1.5. Aircraft test equipment that is connected to the aircraft can be left connected. However, it must be written up in the aircraft forms. Furthermore, any open lines or connectors must have suitable protective devices installed. In addition, test equipment must not be left connected unattended overnight unless approved by the MXG/CC.

1.1.1.6. Personnel are permitted to leave their COMM cord and head set connected to the aircraft unattended, if the aircraft is scheduled to fly within the next thirty minutes. Otherwise, the equipment will be stored in the CTK.

1.1.2. In-shop CTK’s must remain locked when not in use unless they are stored in a location that is constantly manned or secured. When a work center is not large enough to facilitate a manned tool room, the shop supervisor is responsible for an itemized inventory of all tools and equipment at the beginning and end of each shift.

1.2. Control: Store CTK’s, tools, and equipment in a designated location for positive control and ease of inventory. Personnel are responsible for control of the CTK and equipment they sign out.

1.2.1. Wing agencies shall control tools, equipment and electronic devices that are dispatched to 482FW aircraft parking/runway/taxi areas and aircraft maintenance areas IAW AFI 21-101, AFRC SUP and this instruction.

1.3. Accountability:

1.3.1. All 482 MXG maintenance areas that use CTK’s/Equipment on the 482 FW flight line or maintain related parts/equipment shall use the Tool Control Accountability System (TC-MAX) tool accountability system.

1.3.1.1. Deleted.

1.3.2. Aircrew Flight Equipment (AFE) sections shall follow CTK guidance given in AFI 11-301V1, *Aircrew Flight Equipment Program.*

1.3.3. All 482 MXG CTK's shall be marked with a nine-digit EID as identified in **Attachment 2.**

2. Inventory.

2.1. **Annual**. All tools and equipment are completely inventoried at least annually or when the CTK custodian changes. The purpose of this inventory is to perform a comprehensive inspection of all tools and equipment and is more extensive than the daily beginning and end of shift inventory. The CTK custodian/alternate performs the annual inventory. When CTK custodians change, the outgoing and incoming custodians perform the inventory together. CTK custodians shall maintain a Master Inventory Listing (MIL) for each type of kit assigned to the work center. The listings shall be updated annually and when the CTK custodian changes to ensure MIL accuracy. MILs shall be signed by the applicable flight Officer in Charge (OIC), Non-commissioned Officer in Charge (NCOIC), Flight or Section Chief.

2.1.1. The annual inventory shall consist of:

2.1.1.1. Ensuring the MIL in the CTK matches the MIL in TC-MAX (if used). This also applies to Support Equipment (SE) with accessories.

2.1.1.2. Ensuring the MIL matches the contents of the CTK or SE.

2.1.1.3. Local manufactured tools and consumables are identified on the MIL.

2.1.1.4. All tools are identified on the MIL with minimum name and size.

2.1.1.5. All Equipment Identification Designators (EID) are correct and readable.

2.1.1.6. Inspect all tools and equipment IAW applicable tech data or manufacturer manual. Replace or remove unserviceable tools and document in TC MAX, (if used) or MAJCOM/local form.

2.1.1.7. All tools and equipment are clean and serviceable.

2.1.1.8. No F.O. in the CTK.

2.1.1.9. All tools/equipment properly fit in the foam inlay, (if used).

2.1.1.10. All required forms are present and documentation is correct.

2.2. **Daily:** A visual/"hands-on" CTK and equipment inventory shall be performed prior to operation of aircraft or equipment, at the completion of a job or task, upon return to the work area after sheltering from a real world/exercise event and when signed in and out of the tool storage facility.

2.2.1. All tools are in the CTK and are serviceable.

2.2.2. All SE accessories are accounted for and inside the container.

2.2.3. Torque wrenches are set to the lowest setting.

2.2.4. No F.O. is in the CTK or SE.

2.2.5. AFRC Forms 177, *Consolidated Tool Kit Inventory and Control Log* and AFRC Form 175, *Missing/Removed Tools and Equipment*, documentation is complete and current.

3. Procedures for Warranted Tool Management.

3.1. Warranty tool program procedures outlined in AFI 21-101, AFRC SUP 1, *Foreign Object Damage and Dropped Object Program,* shall be followed.

3.2. Owning section supervisor or tool room facility shall retain tool/equipment warranty documents.

3.3. Warranted tools and equipment shall not be modified if such modification voids the warranty.

4. Procedures for Control and Management of Replacement/Expendable Tools, Consumables and HAZMAT Items Contained in CTK's.

4.1. All consumables located in a CTK shall be identified on the MIL.

4.1.1. All consumables that are on bench stock and are included in a CTK shall be maintained in a secure location and will only be issued by the CTK monitor, alternate or tool room personnel.

4.2. Expendable hand tools, (apexes, blades, grinding wheels etc) that are included in a CTK will be maintained in a secure location and shall only be issued by the tool room personnel or the supervisor.

4.3. Replacement/Spare/Expendable Tool Control: All replacement/spare/expendable tools shall be inventoried and documented quarterly in TC-MAX, (if used) or a MAJCOM/local form.

4.4. The CTK EID shall be etched on larger consumable items such as spools of safety wire. Smaller items such as pin hole plugs, splices, split pins, etc., shall be placed in a container or holder with the CTK EID and quantity marked on the outside of the container by etching, marking with permanent marker or labeling tape.

4.5. The container shall be inventoried after each job completion or when the CTK is turned in or transferred to another person. Each container shall be opened and inventoried during sign-in and sign-out.

4.6. Upon return to the tool room, each container shall be refilled to the specified quantity. If adequate consumables are not available for replacement, the quantity missing shall be annotated as missing on AFRC Form 175.

4.7. The individual that signs the CTK out is responsible for full accountability of all consumables.

5. Procedures for the transfer of CTK's at the Job Site.

5.1. When a CTK is exchanged at the job site, the AFRC Form 177 is maintained in the CTK and the inventory is checked by both individuals.

5.2. If tools are found missing, lost tool procedures shall be implemented.

5.3. If no tools are missing, the incoming individual shall sign the AFRC Form 177, accepting responsibility for the CTK contents.

6. Lost Tool Procedures. Refer to 482 FWI 21-101 for aircraft lost tool procedures. Lost tool procedures for all other situations are as follows:

6.1. If a tool or object is lost by an individual and is recovered by the same individual within two hours, no further action is required.

6.2. If the tool/object is not found within two hours, initiate AFRC Form 174, *Lost Tool/Object Report* and notify the Expediter/MOC/Supervisor and Quality Assurance (QA).

7. The Series/Block of CTK Identification Numbers. All CTK identification numbers shall be assigned by QA. See Attachment 2 for assigned CTK identification numbers.

8. Procedures for Control of Personal Protection Equipment (PPE). PPE (ear defenders, reflective belts etc) shall be controlled by one of the two procedures listed below:

8.1. PPE shall be marked with a CTK EID, kept within a CTK and shall be controlled as a tool.

8.2. PPE issued to individuals shall be kept, maintained, and controlled by the person issued the item. As a minimum, this PPE shall be marked with the World-Wide Identification code (WWID) of the individuals assigned work center and their employee number. The initial issue shall be recorded in TC-MAX, (if used) or AF Form 1297, *Temporary Issue Receipt*.

9. Rag Control Procedures.

9.1. Use bulk ordered non uniform lint free rags or uniform size rags to facilitate control procedures.

9.2. Secure all clean and dirty rag containers to ensure no unauthorized access.

9.3. Sign-out required number of rags to all users in TC-MAX, if used or MAJCOM/local form.

9.4. Verify accurate rag count upon return and verify the quantity in TC-MAX.

9.4.1. Non TC-MAX users shall document sign in on Major Command (MAJCOM)/local form.

9.5. Follow lost tool procedures, if a rag is lost.

9.6. Hydrazine Response trailers shall have rags bundled in quantities to allow expedient accountability without hindering emergency actions. All rags must be accounted for prior to replenishing trailers.

9.7. 482 MXG Deployments:

9.7.1. Rags for deployments shall be bundled in the same quantities as home-station and the same rag size requirements shall be maintained.

9.7.2. The deployed CTK custodian shall sign rags in/out on an AFRC Form 177 if TC-MAX is unavailable.

9.7.3. If a rag is lost, home-station lost tool procedures shall be followed unless procedures are provided at deployed location.

10. Personnel Authorized to Procure Tools. Squadron Commanders shall identify by letter, personnel authorized to procure tools.

11. Local Manufactured Tools and Equipment Controls. See 482 MXG Operating Instruction (OI) 23-101, *Local Manufacture* for local manufacture of tools and equipment. Local

Manufactured Tools and equipment shall be controlled as a tool/equipment IAW AFI 21-101, AFRC SUP 1, and this instruction.

12. Tool Control Procedures for Depot Teams, Factory Representatives, and Contract Field Teams Working on Equipment within the Unit. Depot teams, factory representatives, and contract field teams shall show full accountability for tools in accordance with the applicable portion of the contract or will comply with this publication. A listing of CTK numbers or other means of tool identification will be coordinated with QA.

13. Procedures and Responsibilities Where Two or More Work Centers Operate a Single Tool Room/Support Elect to Distribute CTK's to a Decentralized Location.

13.1. Procedures: The NCOIC of the Tool Room/Support Section shall provide a secure area to store CTK's, tools, equipment and Technical Orders, Personal Protection Equipment (PPE), bench and operating stock, consumables and chemicals needed to support flight-line or back shop maintenance and generation activities. The Flight/Section Chiefs shall coordinate with the Tool Room/Support Section NCOIC on the CTK's, tools, equipment and Technical Orders, PPE, bench and operating stock, consumables and chemicals they need to have stored in the tool room or within the work center.

13.2. Responsibilities:

13.2.1. Flight/Section Chiefs are responsible to:

13.2.1.1. Manage CTK's, tools and equipment stored in the tool room or within the work center.

13.2.1.2. Ensure the MIL is accurate for each CTK and test equipment item requiring an MIL.

13.2.1.3. Ensure periodic and scheduled inspections of CTK's and equipment are accomplished to include forms documentation.

13.2.1.4. Inform Tool Room/Support Section of needed PPE, consumables, chemicals, bench and operating stock.

13.2.1.5. Ensure the turn-in inventory is thorough so as to be sure there are no broken/missing tools and no FOD in the CTK and equipment.

13.2.2. Tool Room/Support Section is responsible to:

13.2.2.1. Maintain a secure and limited access entry into the tool room.

13.2.2.2. Maintain established personal protective equipment (PPE), consumables, chemicals, bench and operating stock.

13.2.2.3. Insure that a thorough visual turn-in inventory of CTK's, equipment, chemicals is complied with.

13.2.2.4. Notify owning work centers when inspections are due or equipment damage is noted.

14. Procedures for Control of Crash Recovery and Hydrazine Response Equipment Permanently Stored/Located in Trailers or Vehicles.

14.1. Crash Recovery Trailer: The Crash Recovery Trailer and truck shall be controlled much like a CTK. Items within the trailer that are not part of an actual CTK shall be marked "Crash Trailer (CT)" and shall have specific locations shadowed, cut-out, or labeled so a thorough inventory can be easily accomplished. Actual CTK's permanently assigned to the Crash Recovery truck & trailer shall be signed out on AFRC Form 177 or TC-MAX to the Crash Recovery Trailer. An AFRC Form 177 kept within the trailer shall be used for daily sign out/in procedures.

14.2. Hydrazine Response Trailer: The Hydrazine Response Trailer shall be controlled much like a CTK. Items within the trailer that are not part of an actual CTK shall be marked "Response Trailer" and shall have specific locations shadowed, cut-out, or labeled so a thorough inventory can be easily accomplished. Actual CTK's permanently assigned to the Hydrazine Response Trailer shall be signed out on an AFRC Form 177 to the Hydrazine Response Trailer. An AFRC Form 177 kept within the trailer shall be used for daily sign out/in procedures.

15. Single Person Sign-in and Sign-out Procedures. When only one individual is available in a work center due to leave, TDY, or any other circumstance, and there is a Flight/Section Chief on duty within the Group, the individual shall contact a Flight/Section Chief who shall verify the inventory was properly accomplished. The Flight/Section Chief shall sign the AFRC Form 177 in the sign-in block as inventoried, if he has no access to TC-MAX and secure the CTK/equipment in the tool room or a secure shop. The individual shall then notify his supervisor and MOC by e-mail that the CTK/equipment needs to be signed-in, (in TC-MAX) prior to CTK/equipment use.

16. Procedures for Controlling Access to Tool Rooms. Tool Rooms are locked when unattended. When no tool room personnel are available, only the Flight/Section Chiefs or shift supervisor are authorized entry.

17. Procedures for Pilot and Life Support Personnel that Dispatch to the Flight Line. Life Support and 482d Operations Group (OG) personnel shall follow all procedures outlined in AFI 11-301V1 for all tools and equipment brought and used on the 482 FW flightline. Use of TC-MAX is not required.

DONALD R. LINDBERG, Colonel, USAFR
Commander, 482d Fighter Wing

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 11-301V1, *Aircrew Flight Equipment Program,* 25 February 2009

AFI 21-101, *Aircraft and Equipment Maintenance Management*, 13 January 2011

482d FWI 21-101, *Foreign Object Damage and Dropped Object Program,* 14 July 2011

482d MXGI 23-101, *Local Manufacture,* 15 May 2011

https://www.my.af.mil/gcss-af61a/afrims/afrims/rims.cfm

Adopted Forms

AF Form 673, *Air Force Publication/Form Action Request*

AF Form 847, *Recommendation for Change of Publication*

AF Form 1297, *Temporary Issue Receipt*

AFTO Form 781, *Aerospace Flight Report and Maintenance Document*

AFTO Form 781A, *Maintenance Discrepancy and Work Document*

AFRC Form 174, *Lost Tool/Object Report*

AFRC Form 175, *Missing/Removed Tools and Equipment*

AFRC Form 177, *Consolidated Tool Kit Inventory and Control Log*,

Abbreviations and Acronyms

ACC—Air Combat Command

AF—Air Force

AFE—Aircrew Flight Equipment

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFRC—Air Force Reserve Command

AFRIMS—Air Force Records Information Management System

AFTO—Air Force Technical Order

AGE—Aerospace Ground Equipment

AMXS—Aircraft Maintenance Squadron

CC—Commander

CTK—Consolidated Tool Kit

EID—Equipment Identifier Designators

e-Publishing—the e-publishing website (www.e-publishing.af.mil)

FW—Fighter Wing

FW/CC—Fighter Wing Commander

FWI—Fighter Wing Instruction

IAW—In Accordance With

MEO—Most Efficient Organization

MIL—Master Inventory Listing

MOC—Maintenance Operations Center

MOF—Maintenance Operations Flight

MOO—Maintenance Operations Officer

MXG—Maintenance Group

MXG CC—Maintenance Group Commander

MXS—Maintenance Squadron

NCOIC—Non-Commissioned Officer In Charge

OIC—Officer In Charge

OG/CC—Operations Group

OPR—Office of Primary Responsibility

PPE—Personal Protective Equipment

QA—Quality Assurance

SE—Support Equipment

TC-MAX—Tool Control Accountability System

WWID—World Wide Identification

Attachment 2

482D AIRCRAFT MAINTENANCE SQUADRON (482 AMXS) AND 482D MAINTENANCE SQUADRON (482 MXS) ASSIGNED CTK EID NUMBERS

482 AIRCRAFT MAINTENANCE SQUADRON AMXS:

APG (MXAA) = U3FMAG001 thru U3FMAG150

Specialist Flight (MXAAS) = U3FMSP001 thru U3FMSP099

Weapons Loading (MXAAW) = U3FWL0001 thru USFWL0020, U3FWM0001 thru U3FWM0008, U3FWWS021 thru U3FWWS23, U3FWG0001 thru U3FWG0003, U3FWMINI1 thru U3FWMINI5, U3FWEOR01 thru U3FWEOR05, U3FWFLY01 thru U3FWFLY03, U3FWGKIT1 thru U3FWGKIT6

Mobility Flight line Maintenance (Includes APG, Specialist Flight and Weapons) =

APG = U3MBAG001 thru U3MBAG099,

Specialist = U3MBSP001 thru U3MBSP099,

Weapons Loading = U3MBWS001 thru U3MBWS099

482 MAINTENANCE SQUADRON (MXS)

482 ACCESSORY MAINTENANCE FLIGHT (MXMI):

Fuel shop (MXMCF) = U3FUC0001 thru U3FUC0099, and U3FUCWRMC1 & U3FUCWRMC2

Egress shop (MXMCG) = U3EG00001 thru U3EG00013

Electro Environmental shop (MXMCE) = U3ES00001 thru U3ES00009, and U3ESCTK01 & U3ESCTK02

Hydraulic shop (MXMCP) = U3HSCTK01 thru U3HSCTK03

AGE FLIGHT (MXMG): U3AGAGE01 thru U3AGAGE10

ARMAMENT FLIGHT (MXMR) - U3AF00001 thru U3AF00010

AVIONICS FLIGHT (MXMV):

AIS (MXMVT) = U3VTAIS01 thru U3VTAIS10 and U3VTIAIS4
ECM (MXMVE) = U3VECTK01 thru U3VECTK10

FABRICATION FLIGHT (MXMF):

Metals Technology (MXMFM) = U3MTCTK01 thru U3MTCTK11:

Non- Destructive Inspection (MXMFN) = U3ND000B1 thru U3ND000B8, U3ND000EK, and U3ND000WA

Structural Maintenance (MXMFR) = U3SMCTK01 thru U3SMCTK20, U3SMBIN07 and U3SMBIN10:

MUNITIONS FLIGHT (MXMW): U3AM 00001 – U3AM00035

Maintenance Flight (MXMI):

Crash Recovery = U3CR00001 thru U3CR00005

Inspection Flight = U3PH00001 thru U3PH00015
Wheel and Tire = U3WT00001 thru U3WT00005
PROPULSION FLIGHT (MXMP):

U3JE00001 thru U3JE00099 and U3JECTK01 thru U3JECTK99

482d Maintenance Group/QUALITY ASSURANCE (482 MXG/MXQ):

U3FMQA002 – U3FMQA003, U3FM00024, U3QAWB001, U3QAWB002

TRANSIENT MAINTENANCE (SSI): U3TACTK01 thru U3TACTK03